Radiologic Case

Mass Lesion in an Intravenous Drug User

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A 22-year-old woman was admitted to hospital for evaluation of fever, nonproductive cough, and right-sided chest pain for five days. She had not had any major medical problems in the past. There was a history of alcoholism and intravenous drug addiction for the past several years.

On physical examination she had fever, tachycardia, and multiple needle marks on the skin. She refused consent for testing for the human immunodeficiency virus.

A chest x-ray film was taken (Figure 1).

What are the findings? What is the diagnosis? How would you treat this patient?

SEE FOLLOWING PAGE FOR DIAGNOSIS AND DISCUSSION.

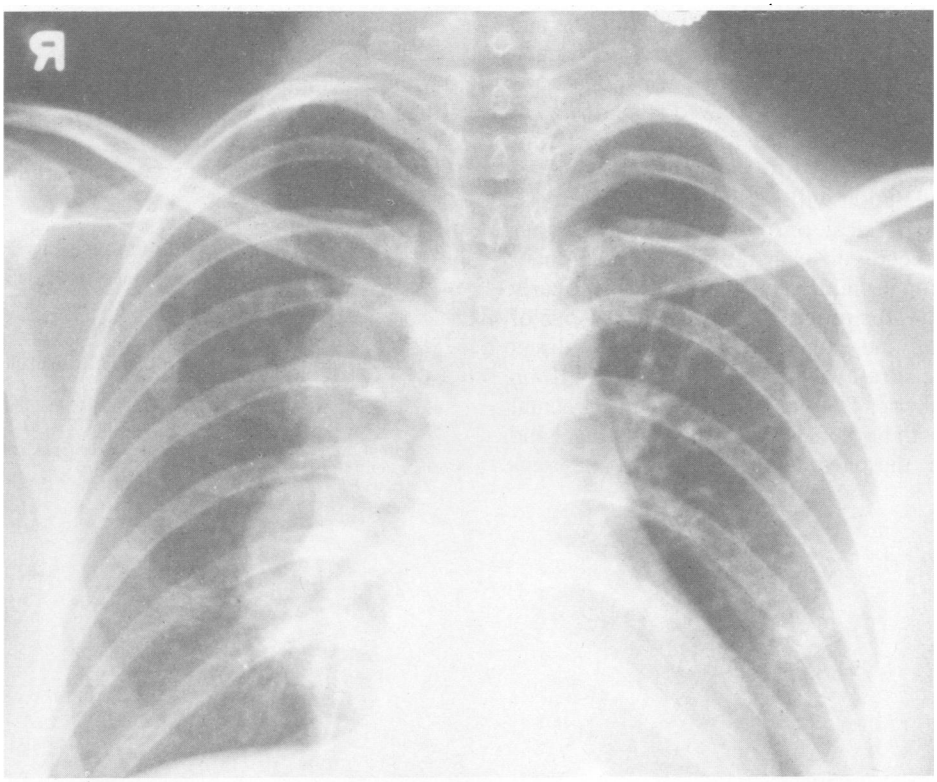

Figure 1.—The posteroanterior chest x-ray film shows a well-circumscribed, smoothly marginated, rounded consolidation projected over the right hilar area.

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DIAGNOSIS: Round pneumonia

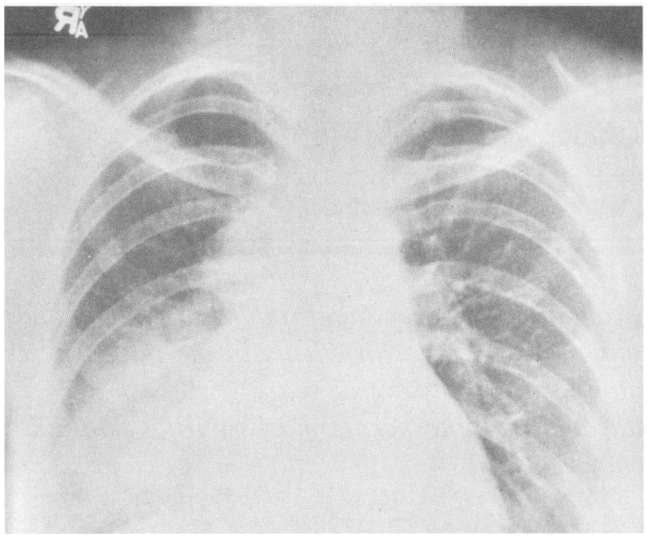

Figure 2.—The chest x-ray film shows extension of the infiltrative process (shown in Figure 1) to involve most of the right middle and lower lobes.

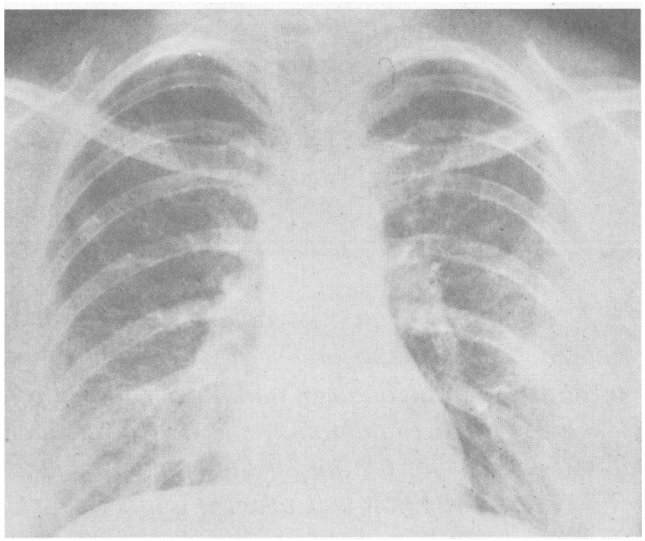

Figure 3.—A follow-up chest film taken of the same patient as in Figures 1 and 2 shows clearing of the infiltrative process.

Because of the patient's history of intravenous drug use, acquired immunodeficiency syndrome-related neoplasms and infections, as well as other causes of lymphadenopathy, were considered. A second chest x-ray film showed extension of the infiltrate to involve most of the right middle and lower lobes (Figure 2). Examination of a sputum specimen did not reveal any predominant organism. The patient, however, was treated with penicillin and showed a good clinical response, as well as clearing on a follow-up chest film (Figure 3).

Pneumonic consolidation will occasionally present as a rounded mass lesion (spherical, or round pneumonia), rather than as a typical segmental or lobar infiltrate. Round pneumonia is more common in children than in adults. In the early course of the infection, the process is predominantly one of alveolar inflammation and exudation. It spreads by direct extension through the intra-alveolar channels (pores of Kohn and channels of Lambert). This can produce a nonsegmental distribution and smooth borders. Later, with centrifugal and peribronchial spread, the pneumonia usually becomes segmental or lobar and then has the typical radiologic appearance seen in the adult population. If the initial x-ray film is taken early enough in the course of the disease, round pneumonia can cause clinical confusion.

In summary, round pneumonia produces a well-circumscribed, smoothly marginated "mass" early in the course of clinical symptoms. It occurs more commonly in children than in adults. Considering this disorder in the differential diagnosis of masses on a chest film, in the proper clinical setting, may prevent unnecessary workup and obviate the use of invasive procedures.

GENERAL REFERENCES

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